FE129
WIRE DRAG

Diagrams 1207-2, 1203-3, 1209-3, 1215

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey ... Wire Drag

Field No. ... CS-265

Office No. ... FE-129WD

LOCALITY

State ... Maine, Massachussets, New Jersey

General Locality ... Rockland Harbor, Maine
Salem Harbor, Mass.

Locality ... Sandy Hook, N.J.

1954

CHIEF OF PARTY
E.B. Brown

LIBRARY & ARCHIVES

DATE ... January 3, 1955

☆ U.S. GOV. PRINTING OFFICE: 1976—669-441

NOTE: A new system for registering Field Examinations (FE's) was established in 1980. All FE's are now consecutively numbered as shown hereon. The date shown in the new format is the actual date of survey. This material was previously registered as;

FE No.8 1954WD

FE129
WIRE DRAG

FE No.8
1954
WIRE DRAG

Diag Chts 1207-2, 1203-3, 1209-3, & 1215

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic F.E. & W.D.

Field No. CS-265 *Office No.* F.E. 8-1954 W.D.

LOCALITY

~~State~~ Rockland Harbor, Me.
Salem Harbor, Mass.
~~Geographic~~ Hyannis Harbor, Mass.
Sandy Hook, N.J.

Locality

19 54

CHIEF OF PARTY

A.B. Brown

LIBRARY & ARCHIVES

DATE January 3, 1955

B-1870-1 (1)

FE No.8 1954 WIRE DRAG

F.E. 8, 1954

(a) The wreck cleared by 53 ft. charted in lat. 40°25.47', long. 73°54.05', from the present field examination prior to verification was revised to 54 ft.

(b) The wreck cleared by 49 ft. charted in lat. 40°25.54', long. 73°54.10', from F. E. 10, 1951, was cleared on the field examination by a wire drag set to an effective depth of 54 ft.

(c) The obstruction cleared by 55 ft. charted in lat. 40°25.86', long. 73°54.60', from F. E. 10, 1951, was cleared on the field examination by a wire drag set to an effective depth of 48 ft. The 55-ft. clearance should be retained on the chart.

A comparison between survey H-6190 (1936) and the field examination shows no conflicts between the depths on H-6190 and either the effective wire drag depths or soundings on the field examination.

The Descriptive Report adequately covers all other matters pertaining to this examination. No further discussion is considered necessary.

Reviewed by - I. M. Zeskind
Date: 20 June 1955

Inspected by - R. H. Carstens

Salem Harbor, Mass.: The purpose of the wire-drag field examination was to determine the least depth on Mann Rock in lat. 40°32.12', long. 70°51.28'.

The results of the field examination are noted on page 4 in the Descriptive Report and are shown on the accompanying sheet No. 2 of 5.

No conflicts between the depths on Chart 241 dated 4-11-55 and the field examination wire-drag effective depths were noted.

Hyannis Harbor, Mass.: The purpose of the wire-drag field examination was to verify or disprove the existence of the "Obstruction Reported" in lat. 41°37.40', long. 70°17.02' in Chart letter 595 (1954).

The results of the field examination are noted on page 5 in the Descriptive Report and are shown on the accompanying sheets Nos. 3 and 4 of 5.

A comparison between Chart 258 dated 6-1-53 and the field examination shows no conflicts between the charted depths and the effective wire drag depths. The obstruction reported in Chart letter 595 (1954) was not applied to Chart 258.

Sandy Hook, N. J.: The purpose of the field examination was to determine the least depth over a wreck in lat. 40°25.47', long. 73°54.05', reported in HON to M 7, (1953), and to verify or disprove the obstruction with a least depth of 30 ft. reported by CGN to M 1, 1953, in Sandy Hook Channel in lat. 40° 29.25', long. 73°58.71'.

The results of the field examination are as follows:

(a) No indication of the wreck in lat. 40°25.47', long. 73°54.05', was obtained within the area dragged.

(b) Hydrographic development of the area in the vicinity of the 30-ft. reported obstruction in Sandy Hook Channel failed to reveal the obstruction.

The results of the field examination are noted on page 5 of the Descriptive Report and are shown on accompanying sheet No. 5 of 5.

A comparison between Chart 369 dated 4-11-55 and the field examinations of Sandy Hook Channel and the wreck in lat. 40°25.47', long. 73°54.05', shows no conflicts between the charted depths and the effective wire drag depths or soundings of the field examinations, except as follows:

Review of Field Examination No. 8, 1954

1. Location and Authority

Wire-drag or hydrographic field examinations were made in the following areas in compliance with the authorities noted:

(a) Rockland Harbor, Me. - Director's letter dated 28 April 1954.

(b) Salem Harbor, Mass. - Director's letter dated 10 August 1954.

(c) Hyannis Harbor, Mass. - Director's letter dated 23 August 1954.

(d) Sandy Hook, N. J. - Director's letter dated 10 August 1954.

Rockland Harbor Me.: The purpose of the wire-drag field examination was to investigate the 33-ft. obstruction in lat. 44°06.01', long. 69°02.87', shown on Chart 209 dated 4-20-53, and originating with H-3195 (1911).

The 33-ft. obstruction is considered disproved by the field examination and should be deleted from the chart.

The 47-ft. sounding shown on Chart 209 dated 4-20-53, in lat. 44°05.97', long. 69°02.88', from H-7831 (1950) was cleared during the field examination by a wire drag set to an effective depth of 41 ft. A wire drag whose effective depth was 44 ft. hung at this location. It is recommended that a cleared depth of 41 ft. be charted.

The results of the field examination are noted on page 4 in the Descriptive Report and are shown on accompanying sheet No. 1 of 5.

Except for the discrepancy in depth above noted, a comparison with prior surveys H-3195 WD (1911) and H-7831 (1950) shows no conflicts between the soundings on the prior surveys and the present field examination.

A comparison between Chart 209 dated 4-20-53 and the field examination shows no conflicts between the charted depths and the effective wire-drag depths, except as mentioned above.

S P E C I A L R E P O R T

WIRE DRAG INVESTIGATIONS

PROJECT CS-265

ROCKLAND HARBOR, MAINE

SALEM HARBOR, MASS.

HYANNIS HARBOR, MASS.

SANDY HOOK, NEW JERSEY

E. B. BROWN * * * * * * * CHIEF OF PARTY

* *

A. AUTHORITY

The authority for these investigations was as follows:

Rockland Harbor, Maine - Conference between the Commanding Officers Ship GILBERT and Ships WAINWRIGHT and HILGARD. (Director's letter dated 4-28-54, 22/MEK, S-1-W&H)

Salem Harbor, Mass. - Directors letter dated 10 August 1954, file No. 22-SRO, S-1-W&H.

Hyannis Harbor, Mass. - Directors letter dated 23 August 1954, file No. 22-SRO, S-2-W&H.

Sandy Hook, New Jersey - Directors letter dated 10 August 1954, file No. 22-SRO, S-1-W&H, and conference between Supervisor, Eastern District and Commanding Officer Ships WAINWRIGHT and HILGARD. Paragraph 5 of the original instructions was revised as per telephone conversation between commanding Officer Ships WAINWRIGHT and HILGARD and the Chief, Section of Hydrography on 12 October 1954.

B. VESSELS AND EQUIPMENT

The Ships WAINWRIGHT and HILGARD were used as end launch and guide launch respectively except during the Rockland Harbor investigation at which time the WAINWRIGHT acted as guide launch and HILGARD as end launch. Launch C&GS-171 was used as the drag tender on the Rockland project.

At Salem Harbor, Mass. a motor whaleboat from the Coast Guard Buoy Tender "CACTUS" was made available for drag tending purposes.

Launch No. C&GS-168 was furnished by the Ship PARKER for tending work at Hyannis Harbor, Mass.

For the Sandy Hook, New Jersey investigation the U. S. Corps of Engineers tug "SAN LUIS" was used on letter B day as a drag tender.

The Ship WAINWRIGHT was equiped with 808 type fathometer No. 58S, the Ship HILGARD with 808-J type fathometer No. 138-SPX, launch C&GS-171 with 808-J fathometer No. 139-SPX and launch No. C&GS-168 with 808-J fathometer No. 116-S. No fathometer was used on the Corps of Engineers tug "SAN LUIS".

C. TIDES

Tidal data for the reduction of soundings on the project at Rockland Harbor, Maine were furnished this party by the Ship GILBERT from the Rockland Harbor portable automatic tide gage.

Tidal data for the investigation at Hyannis Harbor and Salem Harbor, Mass. ~~were~~ was taken from tide staff readings observed by personnel of this party as per the project instructions.

The tidal data for the Sandy Hook, N. J. investigation was furnished by the Washington Office.

D. BOAT SHEETS

The investigation of Rockland Harbor, Maine was accomplished H-8178 using a linen overlay of the Ship GILBERTS' hydrographic boat sheet GI-2354.

In compliance with the instructions, the surveys at Salem Harbor, Mass. and Hyannis Harbor, Mass, were accomplished on Coast and Geodetic Survey Chart Nos. 240 and Topographic Map T-5740 respectively.

For the investigation at Sandy Hook, N. J. there were no charts which adequately covered the area at the scale at which it was deemed best to accomplish the survey; therefore, a boat sheet was requested from the Norfolk processing office. The survey was accomplished on several different charts and later transfered to this sheet.

E. CONTROL STATIONS

Control stations for the Rockland investigation were from hydrographic sheet GI-2354. H-8178

For the survey at Salem, Mass. charted landmarks such as lighthouses, towers and beacons were used as signals. Natural objects of the same nature shown on topographic map T-5740 were used for control of the work at Hyannis, Mass.

Control stations for the Sandy Hook, N. J. project were plotted from data furnished by the Washington Office or scaled from charts 369 and 824 as necessary. One signal, BIG, was located by sextant fixes taken from the Ship HILGARD.

F. SOUNDINGS & DRAG TESTS

Soundings were obtained with the 808 and 808-J type fathometers. All corrections to fathometer soundings are abstracted in the drag volumes from bar checks taken during the field season. Some hydrography was accomplished in conjunction with the drag work at Salem, Mass. and Hyannis, Mass. but this was considered to be reconnaisance work and has not been considered in the final analysis. No variance in charted depths were recorded.

Hydrographic work accomplished at Sandy Hook, N. J. has been retained and will be discussed under section H of this report.

Drag tests were made with a graduated iron pipe suspended from a small float by upright wire. The pipe was coated with white lead to determine the point of contact with the ground wire. At Hyannis Harbor, Mass. on B day no drag tests were obtained. The drag was at no time tight which indicates little if any lift. Upon picking up the drag small pieces of rock were found on the ground wire between buoys N and 4 (WAINWRIGHT end) indicating that the drag was near the bottom and that the bottom contained large gravel. The seas were quite rough and the tender was unable to obtain any tests in the shoal water. A zero lift was assumed for this strip.

At Sandy Hook, N. J. no test was obtained on the work done on letter A day because no tender was available. The area was re-dragged the following day and good tests wereobtained using the tug "SAN LUIS" as tender. Drag conditions were similar on both days and a 2.5 foot lift was assumed for letter A day.

G. CONTROL OF WIRE DRAG

All control was in accordance with standard practices and applicable operating manuals.

H. CONCLUSIONS AND RECOMMENDATIONS

The wire drag investigation of the reported* 33-foot sounding at Latitude 44° 06.0', Longitude 69° 02.9', Chart No. 209, Rockland Harbor, Maine, indicates the ~~sounding~~ depth is deeper than is charted. Hydrographic development by the Ship GILBERT shows a shoalest sounding of 45 feet. The wire drag produced a hang at effective 44 feet and a cleared depth of 41.5 feet. A sounding of 47 feet was obtained by the drag tender at the hang. These soundings and effective depths are all smooth reduced values. It is recommended that this be charted as a 41-foot ~~sounding~~ cleared depth. The investigation is considered adequate and no further field work is recommended.

*Charted from L.423(1911)

ed. JAD 4-28-55 Concur in recommendation.

The wire drag investigation at Salem Harbor, Mass. proved the existence of Mann Rock as charted, Latitude 42° 32' 07.5", Longitude 70° 51' 15.5". The drag hung on the rock at an effective 21.5 feet and cleared with effective 19.5 feet. This is in agreement with the previous survey conducted by the U. S. Corps of Engineers. It is recommended that the charted 20-foot sounding be retained. The survey is considered adequate, no further field work is recommended.

Concur in recommendation. (cf letter 238(1930))

While conducting the investigation of Mann Rock another hang was obtained at Latitude 42° 32.25', Longitude 70° 51.20' with effective 30 feet. This hang was cleared with an effective 27 feet. Lead line sounding was attempted by the tender but nothing shoaler than 30 feet reduced was obtained. While picking up the drag the Ship WAINWRIGHT noticed rust particles on the ground wire and fittings which indicates the hang was on some type of metal. The Ship WAINWRIGHT sounded the area for approximately thirty minutes but found no indication of an obstruction. It is recommended that this be charted as being swept clear to 27 feet. The survey is considered adequate and no further field work is recommended.

Concur in recommendation.

Ch. 1207

271 obstr.

During the investigation it was noted that the two stacks charted at Latitude 42° 32.0', Longitude 70° 53.0' were not in evidence as charted. There are two prominent stacks however atop the building charted at Latitude 42° 31.6', Longitude 70° 52.6'. No accurate location of these stacks was obtained.

Added to chart from Bp. 51960

Chart 1207 no correction 3mo.

The wire drag investigation of the reported obstruction at Latitude 41° 37' ~~40"~~ 40 Longitude 70° 17.02' Hyannis Harbor, Mass. shows that the reported obstruction does not exist within the area covered by the wire drag. In compliance with the instructions for this project the wire drag was set as near the bottom as possible and no obstruction noted. It is recommended that this obstruction be deleted from the chart. The survey is considered adequate and no further field work is recommended.

H.O.N.M 2 - 1/14/54 Concur in recommendation.

In compliance with paragraph 5 of the original instructions as revised, a wire drag investigation was conducted in the vicinity of the wreck charted at Latitude 40° 25' 28", Longitude 73° 54' 03", Sandy Hook, New Jersey. The area was dragged in a radius of from 1/2 to 1 mile in all directions with an effective depth of 53.3° feet to 57.5° feet. No indications of the wreck were obtained within the drag area. It may be concluded that the wreck is either out of the area dragged or at a depth greater than 53.5° feet. It is recommended that the obstruction be charted as having been swept clear to a depth of 53 feet. The survey is considered adequate and no further field work is recommended. (See Review)

Chart 369 (4-11-55)?

Note: Chart 369 retained Ramos wreck [49] 150 yds NNW. Until investigated by Hydro Section See L-776-1956 page 10 HFS 3-8-55

As per conference held between the Supervisor, Eastern District and Commanding Officer Ships WAINWRIGHT and HILGARD development hydrography was accomplished over the reported obstruction at Latitude 40° 29' 14", Longitude 73° 58' 42". No indication of this obstruction was recorded. (See Review)

While conducting the above investigations various landmarks were checked and it was found that the tower charted at Latitude 40° 25' 56", Longitude 73° 58' 52" is no longer in existence. It is recommended this landmark be deleted from the chart.

Deleted from Chart 369 (4-11-55)

Submitted

John B. Watkins, Jr.
Lt. (j.g.) USC&GS

Approved and Forwarded
Lorne G. Taylor
Lt. Comdr. C&GS
Chief of Party

JBWjr/reg

Hydrographic Surveys (Chart Division)

~~HYDROGRAPHIC~~ SURVEY NO. F.E. 8-1954 W.D.

Records accompanying survey:

Boat sheets 5....; sounding vols. .....; wire drag vols. 3.....;

bomb vols. .....; graphic recorder rolls .....;

special reports, etc. 1 Descriptive Report No. CS-265, & 4 envalopes of Fathograms.....

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet		96 Hydro 128 W.D
Number of positions checked		37
Number of positions revised		4
Number of soundings revised (refers to depth only)		*
Number of soundings erroneously spaced		0
Number of signals erroneously plotted or transferred		0
Topographic details	Time	0
Junctions	Time	0
Verification of soundings from graphic record	Time	2

Verification by [signature] Total time 67 Date 6-16-55

Reviewed by [signature] Time 16 Date 6-21-55

* sdgs a(red) day revised for index & ~~velocity~~ speed corrections. (Hyannis Hbr.)

Rough Tender information for a portion of this survey ~~maybe~~ are recorded in Rough Tender records of H-8183WD.

M-2232-1

GEOGRAPHIC NAMES

Survey No. F.E. 8-1954 W.D.

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
										1
										2
										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

M 234

RHC

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. Apr. 1950

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Coastal Surveys: 19 January 1955

Division of Charts: R. H. Carstens

Plane of reference approved in
3 volumes of wire drag records for

HYDROGRAPHIC SHEET FE. No. 8 1954

Locality Rockland, Maine to Sandy Hook, New Jersey

Chief of Party: E. B. Brown in 1954
Plane of reference is mean low water, reading
3.9 ft. on tide staff at Rockland, Maine
39.9 ft. below B. M. 10 (1931)

0.5 ft. on tide staff at Salem, Mass.
18.1 ft. below B.M. 19 (1916)

0.9 ft. on tide staff at Hyannisport, Mass.
6.1 ft. below B.M. 9 (1934)

2.0 ft. on tide staff at Sandy Hook, New Jersey
9.3 ft. below B.M. 2 (1923)

Height of mean high water above plane of reference is as follows:

Rockland, Maine	=	9.7 feet
Salem, Mass.	=	9.0 feet
Hyannisport, Mass	=	3.1 feet
Sandy Hook, N. J.	=	4.6 feet

E.C. McKay
Tides Branch
Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE 877988

NAUTICAL CHARTS BRANCH

SURVEY NO. F.E. 8-1954 W.D.

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
1/3/55	241	J.P. Walby	Before ~~After~~ Verification and Review
			Added 27 Obstr
		~~Hall~~	Before After Verification and Review
1/12/55	1106	Sam Gam	Before ~~After~~ Verification and Review
			no correction
2-24-55	824	Geo. W. Bragonier	Before ~~After~~ Verification and Review added 31 ft sndg.
15 Mar '57	824	H.E. MacEwen	Examined after V & R.
Feb. '55	369	Eaton	Before ~~After~~ Verification and Review
3/14/55	1108	Goodrich	Before ~~After~~ Verification and Review
1/12/56	1108	J.P.W.	Completely applied after review
3-22-55	1207	F.M. Albert	Before ~~After~~ Verification and Review add 27 Obstr Salem Hbr
2/19/55	70	P H Andrus HFS	Before ~~After~~ Verification and Review Exam. for artificial changes None found
4-25-55	1215	R. K. DeLawder	Before ~~After~~ Verification and Review Verified after review of FE 8. HFS.
			Corrections made as per Ltr Chief Surv #140 pending verification of W. D. assembly. completely applied
			Before After Verification and Review
4/28/55	1203	S.A. McGann	Work verified, but not reviewed.
	After	review by JPW	Results will be entered on H7831 when
			complete (now penciled on H7831.)
5/24/55	440	H.E. MacEwen	after Verification - before review.
6/22/55	1209	F.W. Evans Jr	After V & R
6/22/55	258	N.W. Burgoyne	After V & R.
7/14/55	310	D.H. Benson	After V & R.
7/20/55	209	D.H. Benson	" " "
8/19/55	240	Sam.	After ver. and review.

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

continued on following page

NAUTICAL CHARTS BRANCH

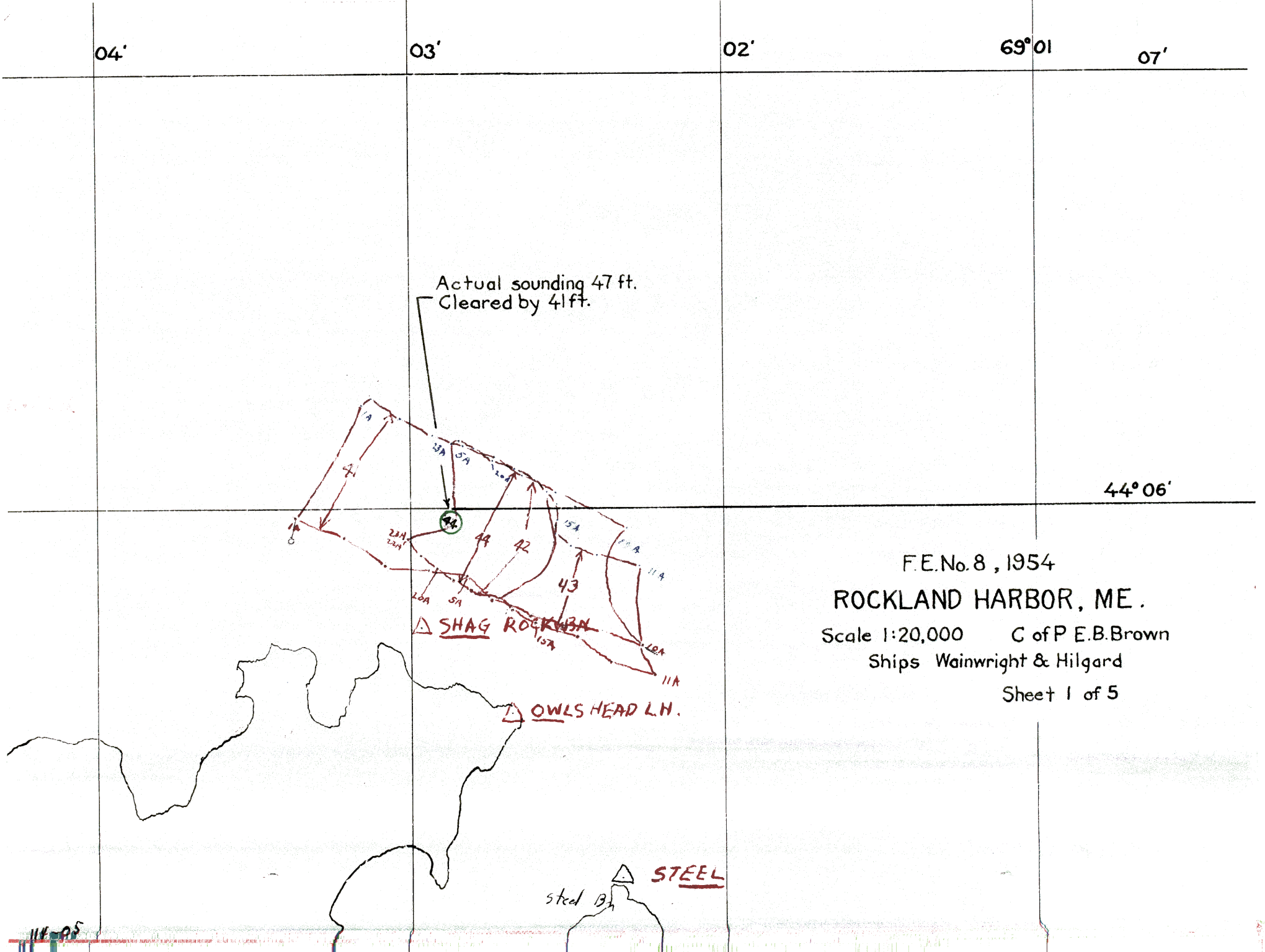
SURVEY NO. F.E. 8 - 1954 W.D.

Record of Application to Charts cont'd.

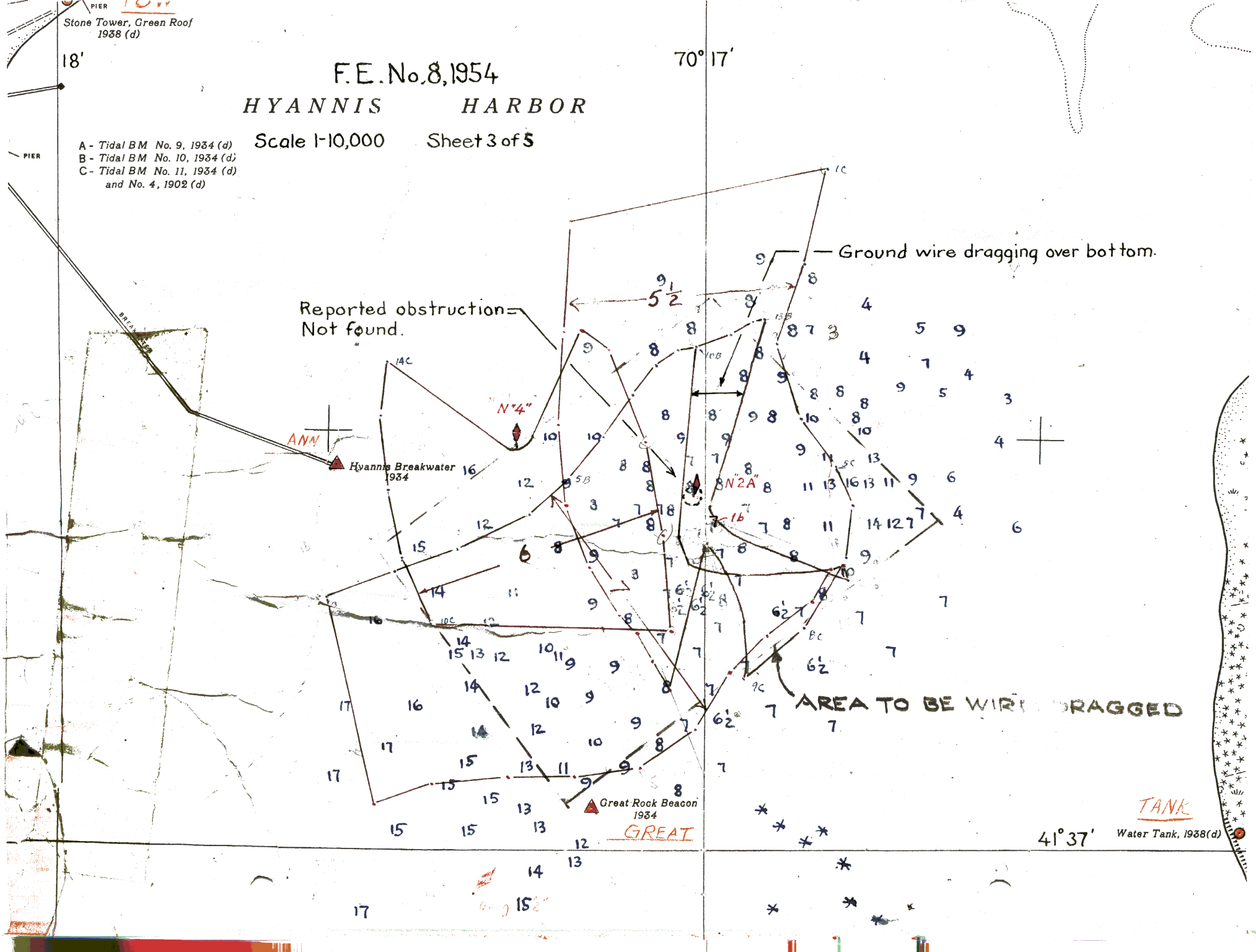
DATE	CHART	CARTOGRAPHER	REMARKS
May '56	70	H.F.S.	~~Before~~ After Verification and Review no change.
Oct. 21 '57	241	J.M.A.	After ver. & Review no change
10-28-58	369	T.A.D.	~~Before~~ After Verification and Review Revised clearance depths over two wks. Fully applied
3/25/60	1207	Helmer	~~Before~~ After Verification and Review Fully applied
4-30-62	Reconst 310	D.R. Wittmann	~~Before~~ After Verification and Review Thrm 209
5-8-63	Reconst 1203	M. Rogers	~~Before~~ After Verification and Review thrm reconst drg of chart 310
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

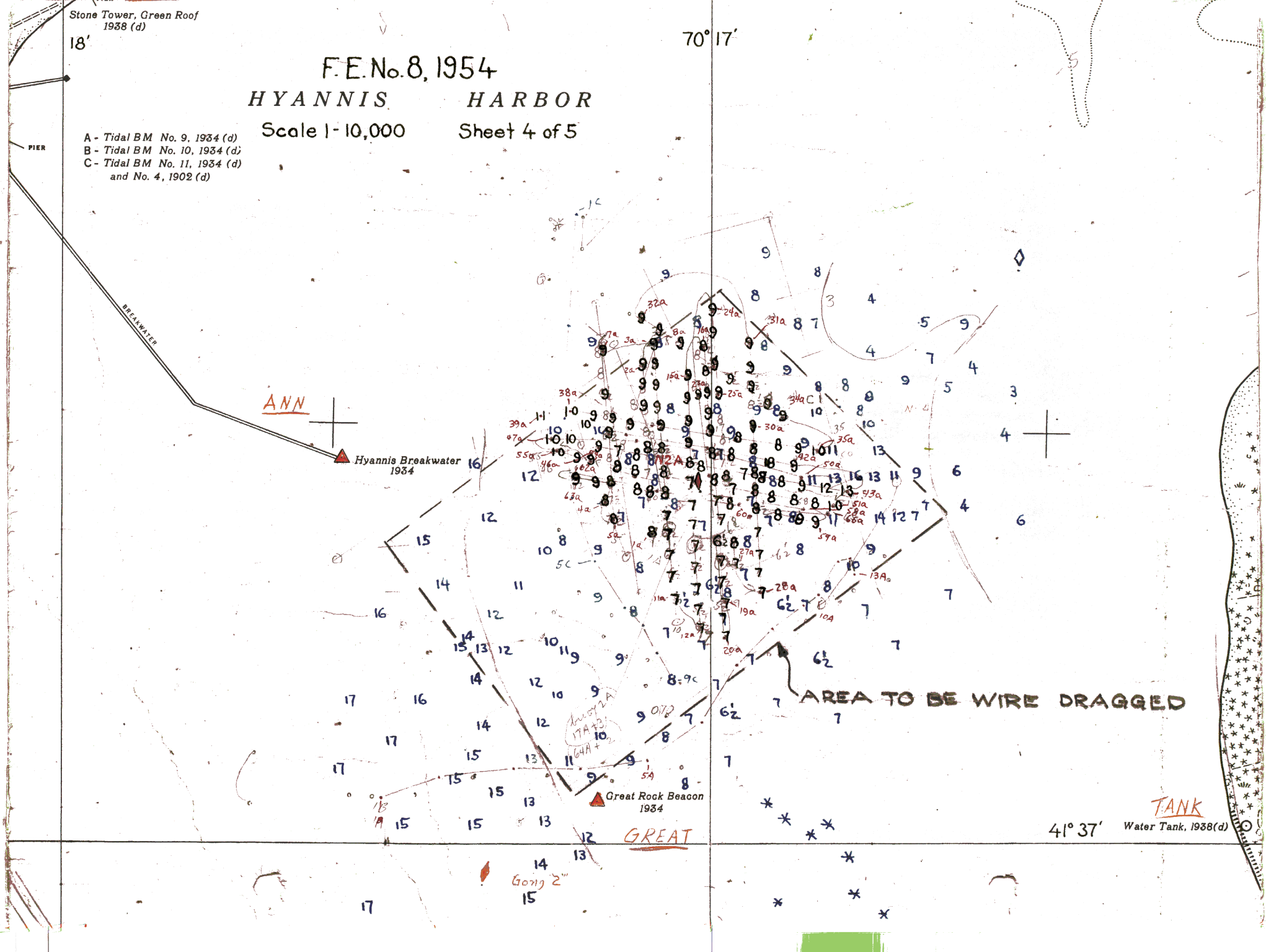
M-2168-1

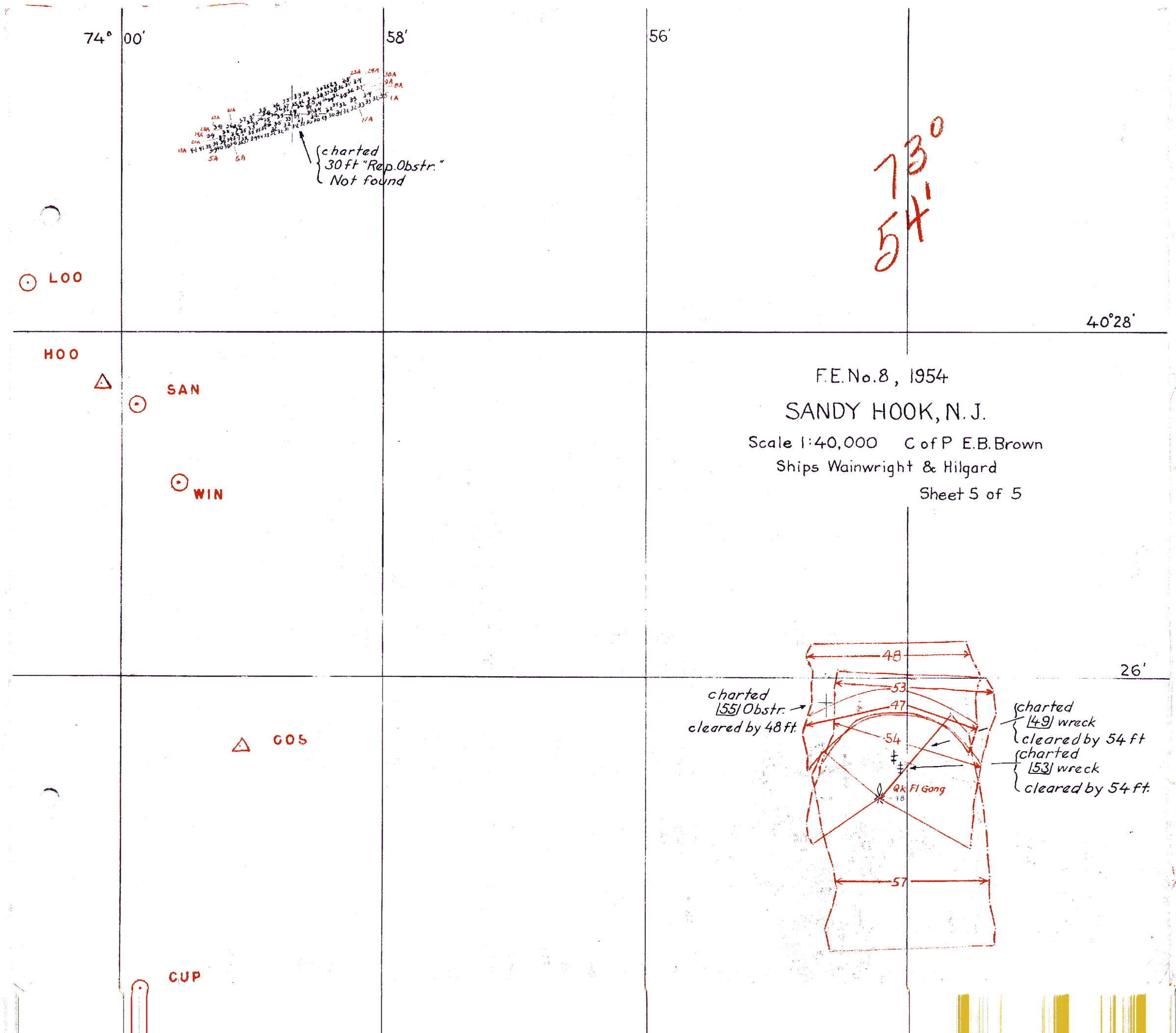
A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

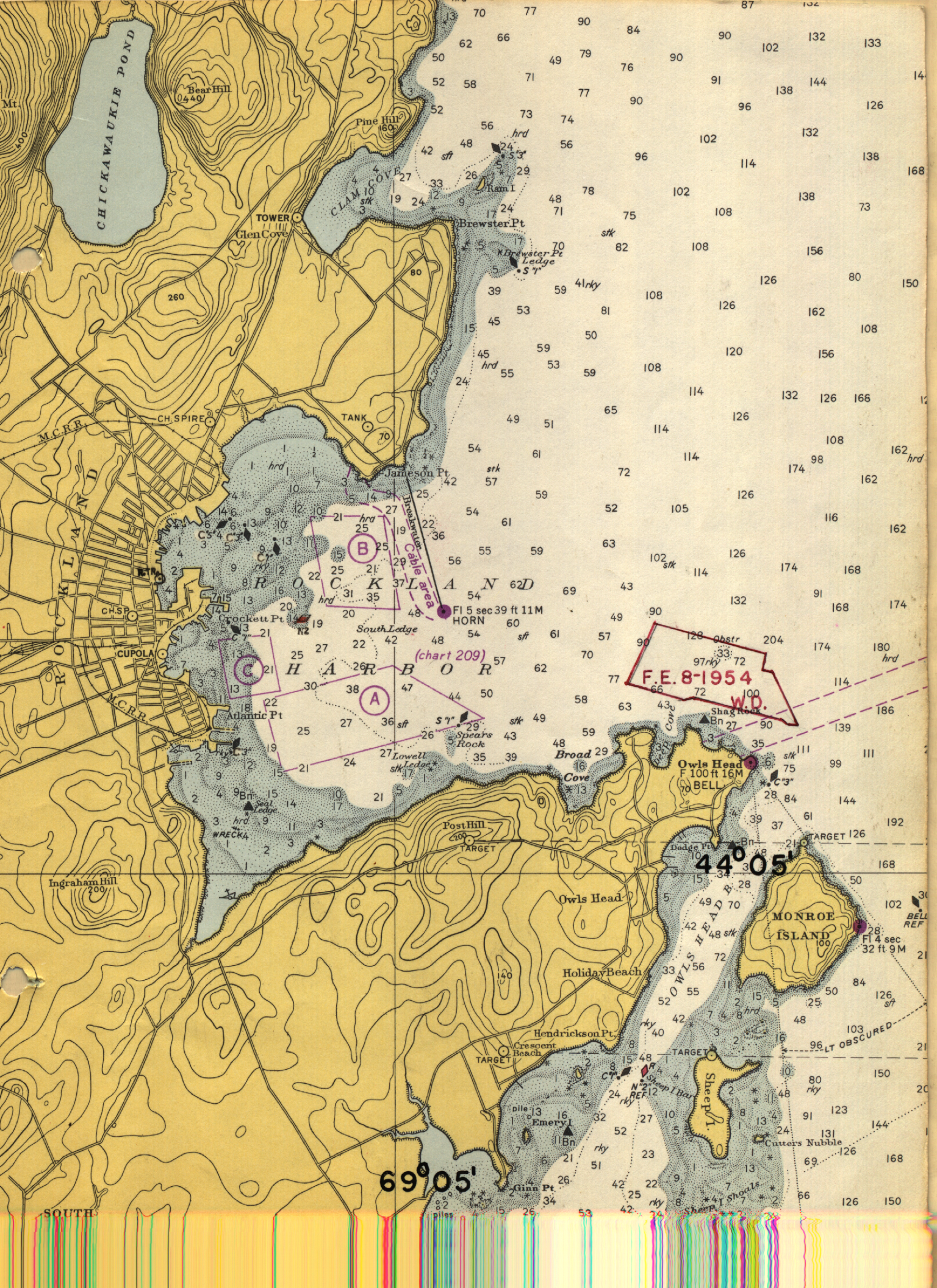

04'
03'
02'
69°01
07'
44°06'
Actual sounding 47 ft.
Cleared by 41 ft.
47
49
42
43
44
SHAG ROCK
OWLS HEAD LH.
STEEL
Steel Bn
F.E.No. 8, 1954
ROCKLAND HARBOR, ME.
Scale 1:20,000 C of P E.B.Brown
Ships Wainwright & Hilgard
Sheet 1 of 5

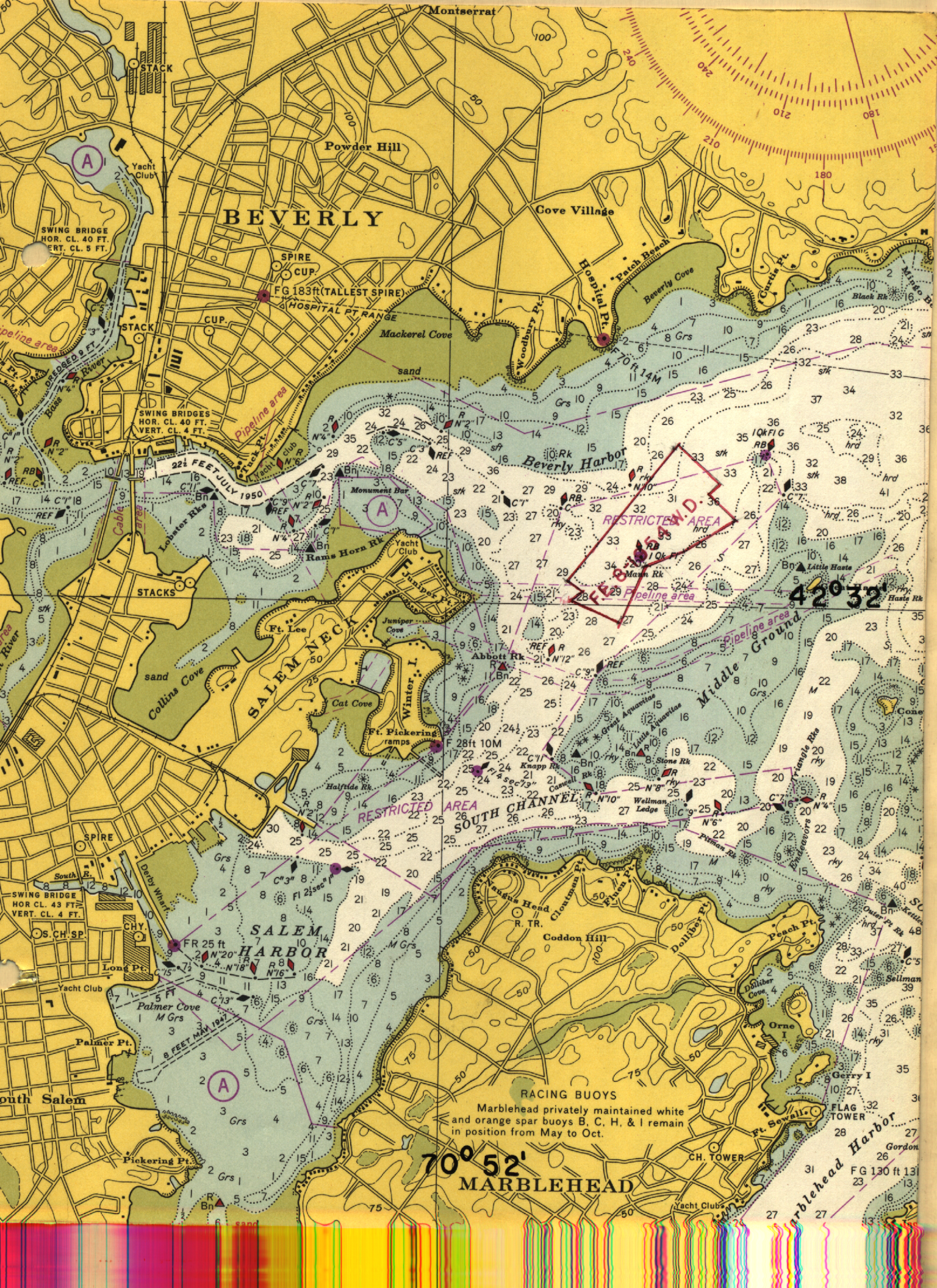
F E No. 8, 1954
SALEM HARBOR, MASS.
Scale 1:25,000 C of P E.B. Brown
Ships, Wainwright & Hilgard
Sheet 2 of 5


Stone Tower, Green Roof
1938 (d)
18'
F.E. No. 8, 1954
HYANNIS HARBOR
70° 17'
Scale 1-10,000
Sheet 3 of 5
A - Tidal BM No. 9, 1934 (d)
B - Tidal BM No. 10, 1934 (d)
C - Tidal BM No. 11, 1934 (d)
and No. 4, 1902 (d)
PIER
Ground wire dragging over bottom.
Reported obstruction
Not found.
5½
N "4"
N "2A"
Hyannis Breakwater
1934
Great Rock Beacon
1934
GREAT
AREA TO BE WIRE DRAGGED
TANK
Water Tank, 1938(d)
41° 37'

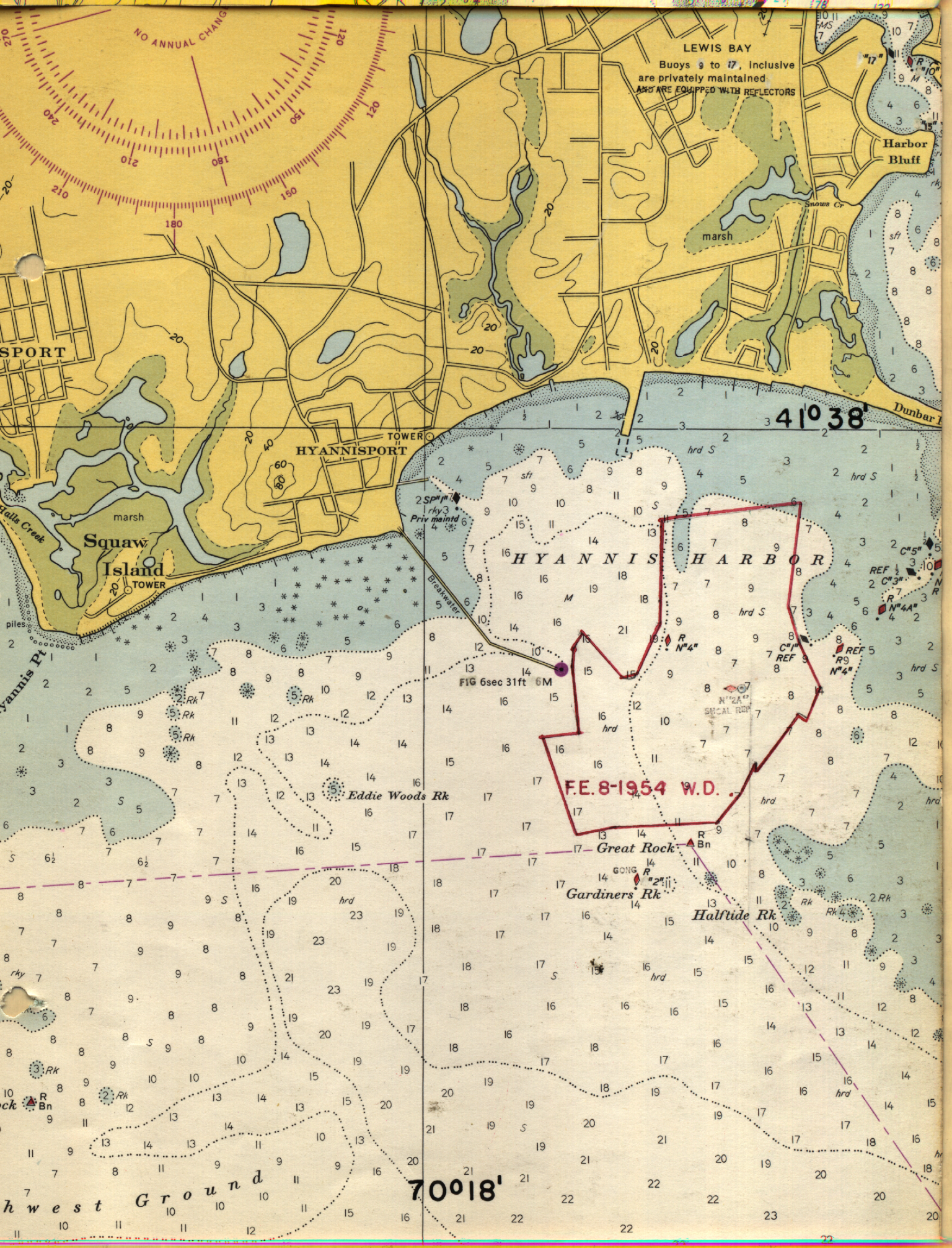

Stone Tower, Green Roof
1938 (d)
18'
70° 17'
F. E. No. 8, 1954
HYANNIS HARBOR
Scale 1-10,000
Sheet 4 of 5
A - Tidal BM No. 9, 1934 (d)
B - Tidal BM No. 10, 1934 (d)
C - Tidal BM No. 11, 1934 (d)
and No. 4, 1902 (d)
PIER
BREAKWATER
ANN
Hyannis Breakwater
1934
AREA TO BE WIRE DRAGGED
Great Rock Beacon
1934
GREAT
TANK
Water Tank, 1938(d)
41° 37'


74° 00'
58'
56'
73°
54'
40°28'
26'
charted
30 ft "Rep. Obstr."
Not found
LOO
HOO
SAN
WIN
COS
CUP
F.E. No. 8, 1954
SANDY HOOK, N.J.
Scale 1:40,000 C of P E.B. Brown
Ships Wainwright & Hilgard
Sheet 5 of 5
48
53
47
54
57
charted
55 Obstr.
cleared by 48 ft.
charted
49 wreck
cleared by 54 ft
charted
53 wreck
cleared by 54 ft.
Qk Fl Gong


CHICKAWAUKIE POND
Bear Hill
440
Mt.
Pine Hill
Ram I
CLAM COVE
TOWER
Glen Cove
Brewster Pt
Brewster Pt Ledge
S "1"
CH. SPIRE
TANK
M.C.R.R.
ROCKLAND
Jameson Pt
Breakwater
Cable area
ROCKLAND HARBOR
(chart 209)
Fl 5 sec 39 ft 11M
HORN
South Ledge
CUPOLA
Crockett Pt
N2
Atlantic Pt
Spears Rock
Lowell Ledge
WRECK
Seal Ledge
Ingraham Hill
200
Post Hill
TARGET
F.E. 8-1954
W.D.
Shag Rock
Bn
Broad Cove
Owls Head
F 100 ft 16M
BELL
Owls Head
OWLS HEAD B.
MONROE ISLAND
Fl 4 sec
32 ft 9M
Holiday Beach
Hendrickson Pt.
Crescent Beach
TARGET
Sheep I Bar
Sheep I.
Emery I
Bn
Cutters Nubble
Ginn Pt
Shoals
SOUTH
44°05'
69°05'



Montserrat
STACK
Powder Hill
Yacht Club
BEVERLY
Cove Village
SWING BRIDGE HOR. CL. 40 FT. VERT. CL. 5 FT.
SPIRE
CUP.
FG 183ft (TALLEST SPIRE)
HOSPITAL PT RANGE
Mackerel Cove
Hospital Pt.
Woodbury Pt.
Patch Beach
Beverly Cove
Curtis Pt.
Black Rk
Pipeline area
DREDGED 9 FT
Bass River
SWING BRIDGES HOR. CL. 40 FT. VERT. CL. 4 FT.
Tuck Pt.
22½ FEET JULY 1950
Monument Bar
Beverly Harbor
RESTRICTED AREA
Lobster Rks
Rams Horn Rk
Yacht Club
Juniper Pt.
Maun Rk
Little Haste
Haste Rk
42°32'
STACKS
Ft. Lee
Juniper Cove
SALEM NECK
Abbott Rk
Middle Ground
Collins Cove
Cat Cove
Winter I.
Ft. Pickering ramps
F 28ft 10M
Great Aquavitae
Little Aquavitae
Knapp Rk
Caswell Rk
Stone Rk
Wellman Ledge
Triangle Rks
Halftide Rk
RESTRICTED AREA
SOUTH CHANNEL
Pitman Rk
Endeavors
SPIRE
South R.
Derby Wharf
SWING BRIDGE HOR CL. 43 FT. VERT. CL. 4 FT.
S.CH.SP.
CHY.
FR 25 ft
SALEM HARBOR
Long Pt.
Yacht Club
Palmer Cove
8 FEET MAY 1947
Palmer Pt.
Naugus Head
Cloutman Pt.
Fluen Pt.
Dolliber Pt.
Coddon Hill
Peach Pt.
Dolliber Cove
Orne I
Gerry I
FLAG TOWER
Ft. Sewall
Marblehead Harbor
CH. TOWER
Yacht Club
South Salem
Pickering Pt.
RACING BUOYS
Marblehead privately maintained white and orange spar buoys B, C, H, & I remain in position from May to Oct.
70°52'
MARBLEHEAD
FG 130 ft



NO ANNUAL CHANG
LEWIS BAY
Buoys 9 to 17, inclusive
are privately maintained
AND ARE EQUIPPED WITH REFLECTORS
Harbor
Bluff
Snows Cr
marsh
SPORT
HYANNISPORT
TOWER
Squaw
Island
TOWER
Halls Creek
marsh
piles
Dunbar
41°38'
HYANNIS HARBOR
Breakwater
FIG 6sec 31ft 6M
F.E. 8-1954 W.D.
Eddie Woods Rk
Great Rock
Gardiners Rk
Halftide Rk
GONG
hwest Ground
70°18'